

What is claimed is:

1. A hydrocarbon cracking catalyst in which zeolite is fixed in the pores of a metal oxide support.
- 5 2. The hydrocarbon cracking catalyst of claim 1, wherein the zeolite is comprised in 0.1-30 wt% per 100 wt% of the metal oxide support.
- 10 3. The hydrocarbon cracking catalyst of claim 1, which is used to crack C₄-C₈ paraffinic or olefinic hydrocarbons.
- 15 4. The hydrocarbon cracking catalyst of claim 1, wherein the metal oxide has a shape selected from the group consisting of a sphere, a Raschig ring and a Leschig ring.
- 20 5. The hydrocarbon cracking catalyst of claim 1, wherein the metal oxide is selected from the group consisting of α -alumina, silica, silica-alumina, zirconium oxide, magnesium oxide, magnesium aluminate and calcium aluminate.
6. The hydrocarbon cracking catalyst of claim 1, wherein the zeolite has a structure of MFI, MEL, TPN, MTT or FER.

7. The hydrocarbon cracking catalyst of claim 1, wherein the zeolite is a HZSM-5 catalyst or a catalyst in which metal constituents are ion-exchanged or impregnated in HZSM-5.

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8. A method for preparing a hydrocarbon cracking catalyst comprising the steps of:

a) vacuumizing a container including metal oxide;

b) adding zeolite powder in water and stirring it to obtain
10 a slurry solution;

c) spraying the slurry solution of step (b) into the vacuous container to penetrate it into the pores of the metal oxide support; and

d) drying the catalyst prepared in step (c) and calcining
15 it to fix zeolite powder in the metal oxide support.

9. The method of claim 8, which is applied to C₄-C₈ paraffinic or olefinic hydrocarbons.

20 10. The method of claim 8, wherein the metal oxide has a shape selected from the group consisting of a sphere, a Raschig ring and a Leschig ring.

11. The method of claim 8, wherein the metal oxide is selected from the group consisting of α -alumina, silica, silica-alumina, zirconium oxide, magnesium oxide, magnesium aluminate and
5 calcium aluminate.

12. The method of claim 8, wherein the zeolite has a structure of MFI, MEL, TPN, MTT or FER.

10 13. The method of claim 8, wherein the zeolite is a HZSM-5 catalyst or a catalyst in which metal constituents are ion-exchanged or impregnated in HZSM-5.

14. The method of claim 8, wherein the zeolite is comprised
15 in 0.1-30 wt% per 100 wt% of the metal oxide support.